Putting King County GIS Data to Work
Our goal in this one day short course to help new ArcView users to get up and running using ArcView GIS with King County Data. One of the primary challenges new users encounter is how to quickly find data in the King County GIS Data Warehouse. This short course is designed to support your efforts to access and analyze King County GIS data effectively.

Today's Case Study
Suppose your manager asked you to create a map suitable for use in a Power Point presentation which would feature the Cedar River, and .25 mile buffer zone around the Cedar River. By the way, he or she would also like you locate King County landmarks, which fall within this .25 buffer zone. Accessing NIES aerial photography for the study area might also enhance your project. It would be great if you could have the analysis prepared for this slide by lunchtime. Your manager is meeting with the council at 3:00pm this afternoon, so let's get started.

Step 1 Start ArcView and Load the KC Public Library Extension

Step 2 Add Themes to the View using the KC Public Library dialog box

OR

(Optional) Use the Add Theme dialog box

Step 3 Set the Name of the View, Map Units, and Distance Units

Step 4 Join Streams to Stream Name Lookup Table

Step 5 Use the Query Builder to Locate the Cedar River

Step 6 Convert Selected Cedar River arcs to Cedar.shp

Step 7 Buffer the Cedar River by 0.25 miles

Step 8 Select Landmarks and Wetlands, which fall within the buffer zone**.**

Challenge Step: Load the NIES image catalog and View aerial photography using the Orthophoto Index

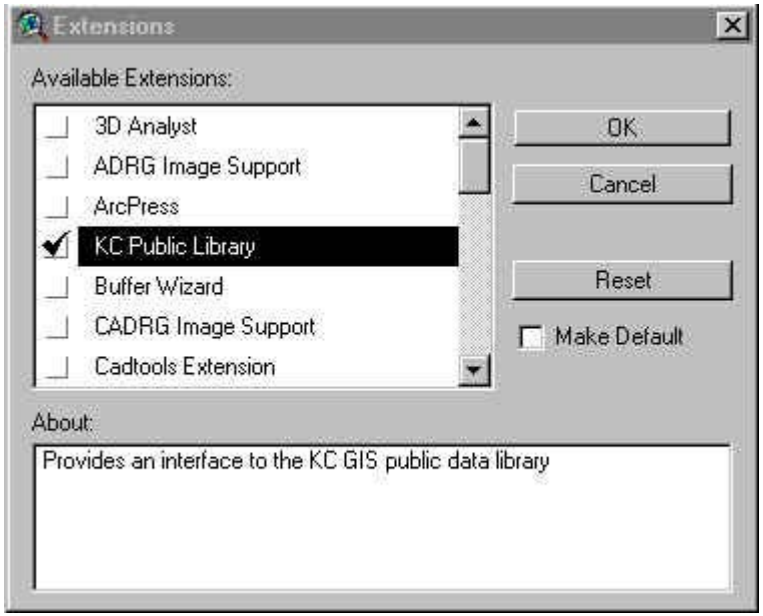
Challenge Step: Identify, which King County Parcels fall within the buffer zone

Step 9 Be Creative. Use color, symbology, and ArcView's callout text functionality to create a Layout or View.

Step 10 Export your Layout or View for use in PowerPoint

Step 1 **Start ArcView and Load the KC Public Library Extension**

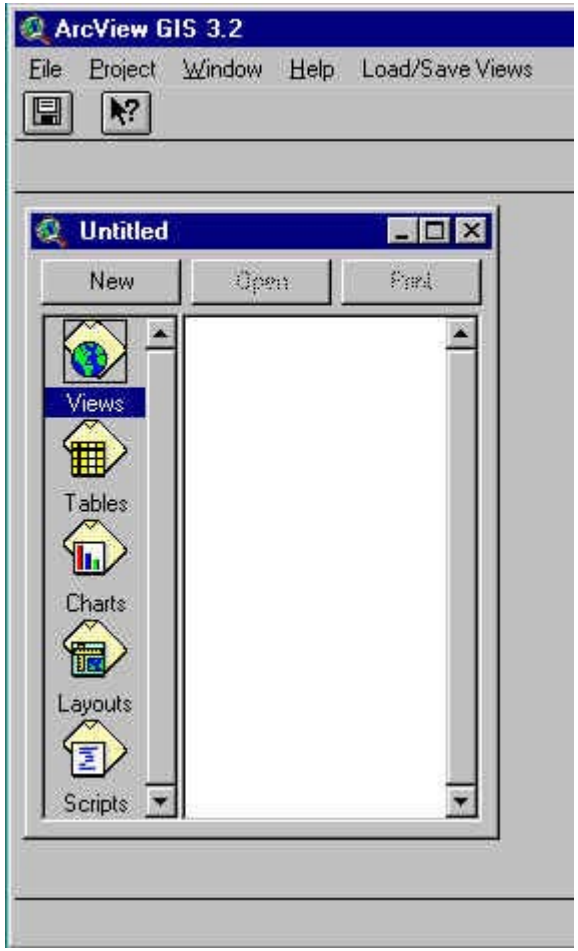
From the desktop, **double-click** on the **ArcView Icon**.
Click on the **Project** window to make it active.
From the File menu, choose **Extensions** to open the Extensions dialog box.
Move your **cursor** over the **KC Public Library check box** (it changes to a check mark) and click on it.



Click **OK** to load the KC Public Library extension.

Step 2 **Add Themes to the View using the KC Public Library dialog box**

In the untitled Project Window displayed on your screen, the **Views** icon is highlighted, and the **New** button is active. Notice that the **Load/Save Views** menu appears as a result of loading the KC Public Library extension.

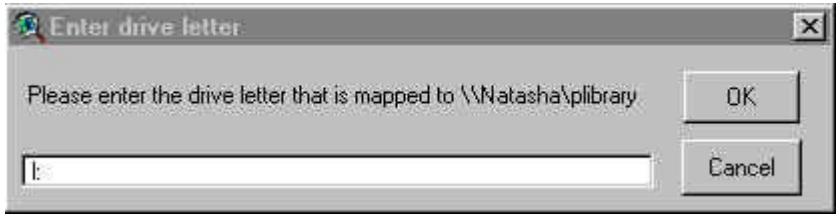


Double click on the **Views** icon to open a brand new **Untitled** View.

Click on the **check mark button** 

You will be prompted for which drive letter is mapped to **\\Natasha\plibrary**. In this classroom **L:** has been mapped to \\Natasha\plibrary

Click **OK** to dismiss the **Enter Drive Letter** dialog box.

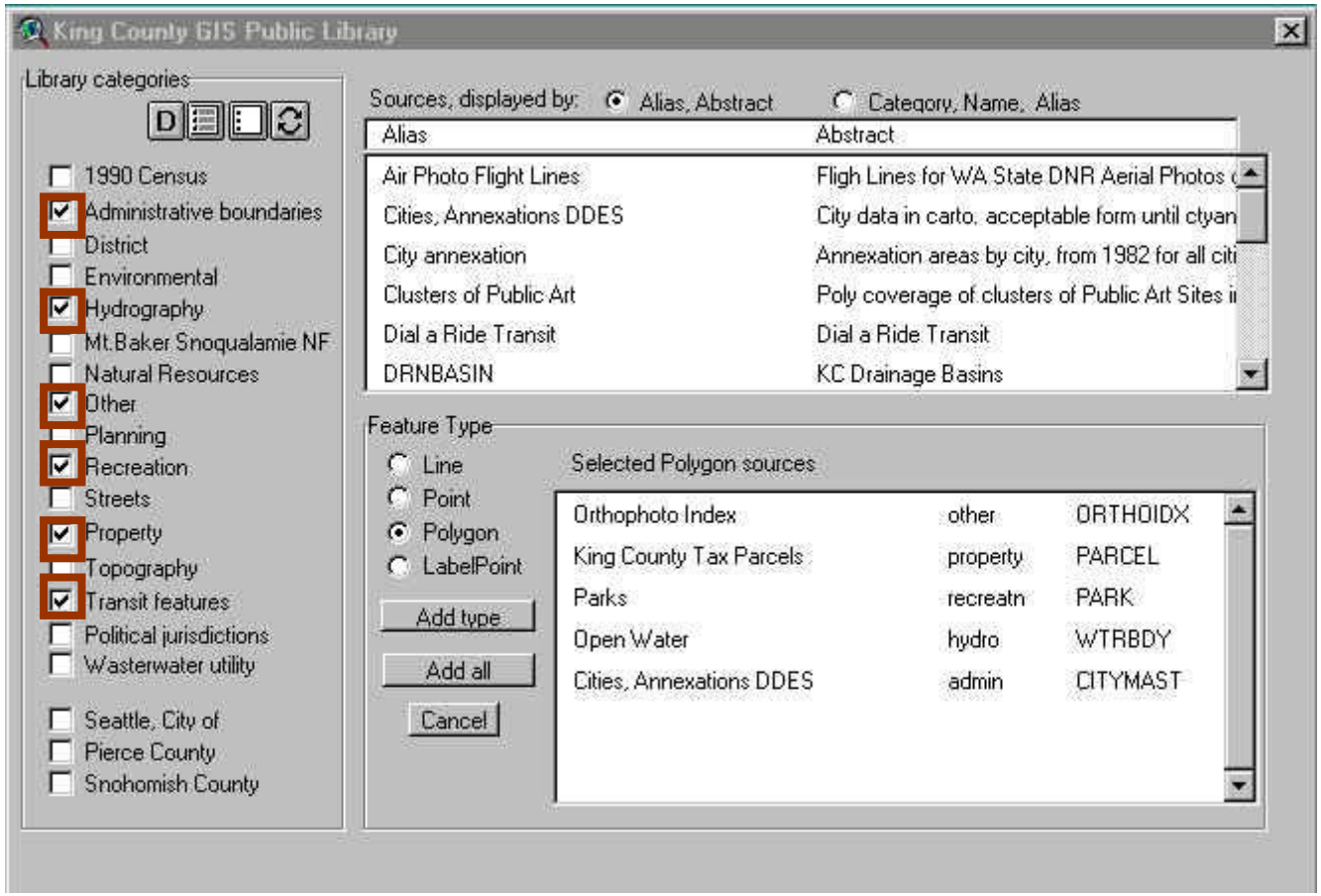


Interactively using the King County Public Library dialog box, we will select 5 polygon themes, 1 line theme, and 1 point theme to successfully complete this ArcView project.

Library Category	***Alias***	***Feature Type***	***Theme Name***
Administrative boundaries	*Cities, Annexations DDES*	*Polygon*	*citymast*
Hydrography	*Open water*	*Polygon*	*wtrbdy*
Recreation	*Parks*	*Polygon*	*parks*
Property	*Parcels*	*Polygon*	*parcels*
Other	*Orthophoto Index*	*Polygon*	*orthoidx*
Hydrography	*Streams*	*Line*	*wtrcrs*
Transit	*Landmarks*	*Point*	*landmark*

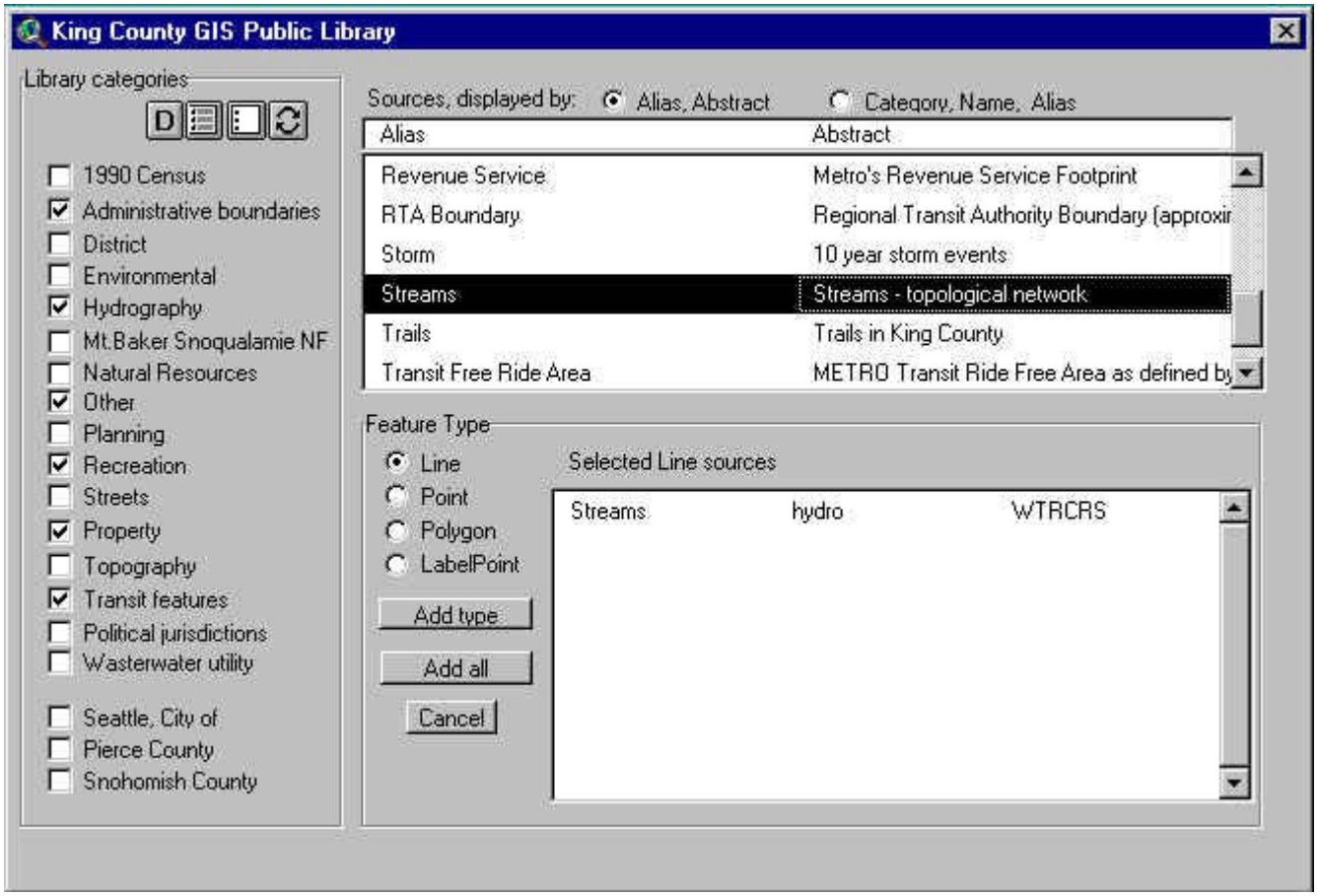
Once the themes are added to the View, they will appear in ArcView's Table of Contents symbolized in a way most map-readers will easily recognize. Time spent using the legend editor to change symbology can now be used to do some basic analysis.

Note: The King County Public Library extension has many other features which are more thoroughly discussed in the following document: I:\other\avlib\AVlib_Instructions.doc

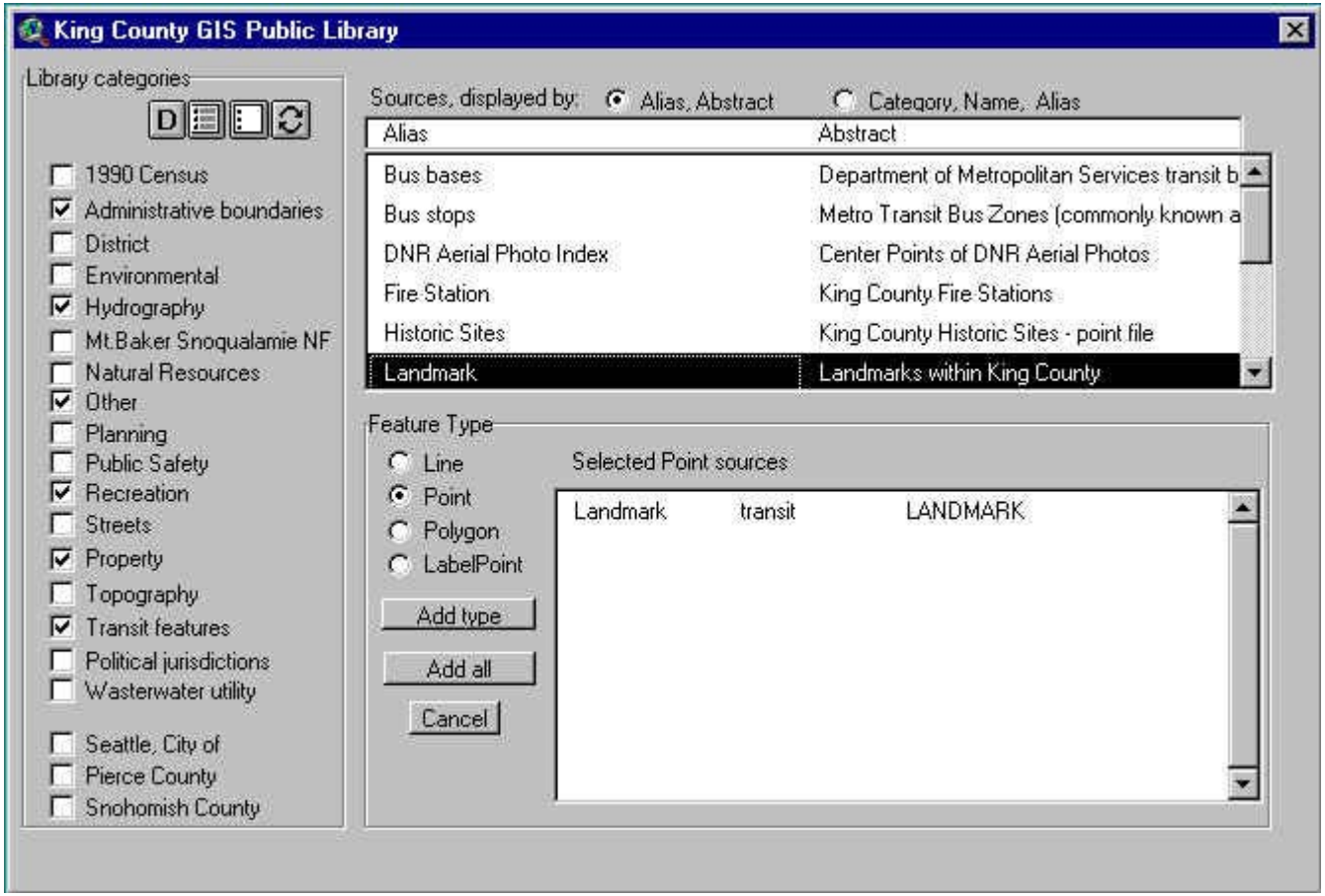


Using the **Feature Type** radio button click on **Polygon**.
Using the **Sources Displayed by** list, click and add the following polygon themes:

Administrative boundaries	*Cities, Annexations DDES*	*Polygon*	*citymast*
Hydrography	*Open water*	*Polygon*	*wtrbdy*
Recreation	*Parks*	*Polygon*	*parks*
Property	*Parcels*	*Polygon*	*parcels*
Other	*Orthophoto Index*	*Polygon*	*orthoidx*



Using the **Feature Type** radio button click on **Line**.
Using the **Sources Displayed by** list, click and add the following line theme:
Hydrography *Streams* *Line* *wtrcrs*



Using the **Feature Type** radio button click on **Point/Label**.
Using the **Sources Displayed By** list, click on the following point theme:
Transit *Landmarks* *Point* *landmark*

Use the **Add All** button to add the themes you have selected to the View.
Dismiss the KC Public Library dialog box by clicking the **x** in the upper right hand corner.

Leave the themes Landmark, Streams, King County Tax Parcels and Orthophoto Index checked off at this time
Make citymast.shp (Municipal Boundaries) the active theme, then use the zoom to active themes button. 

Optional Step 2 ***Use the Add Theme Dialog Box***

Select Municipal Boundaries, Waterbodies, King County Parks, Wetland, and Streams, using the King County GIS Data Warehouse.

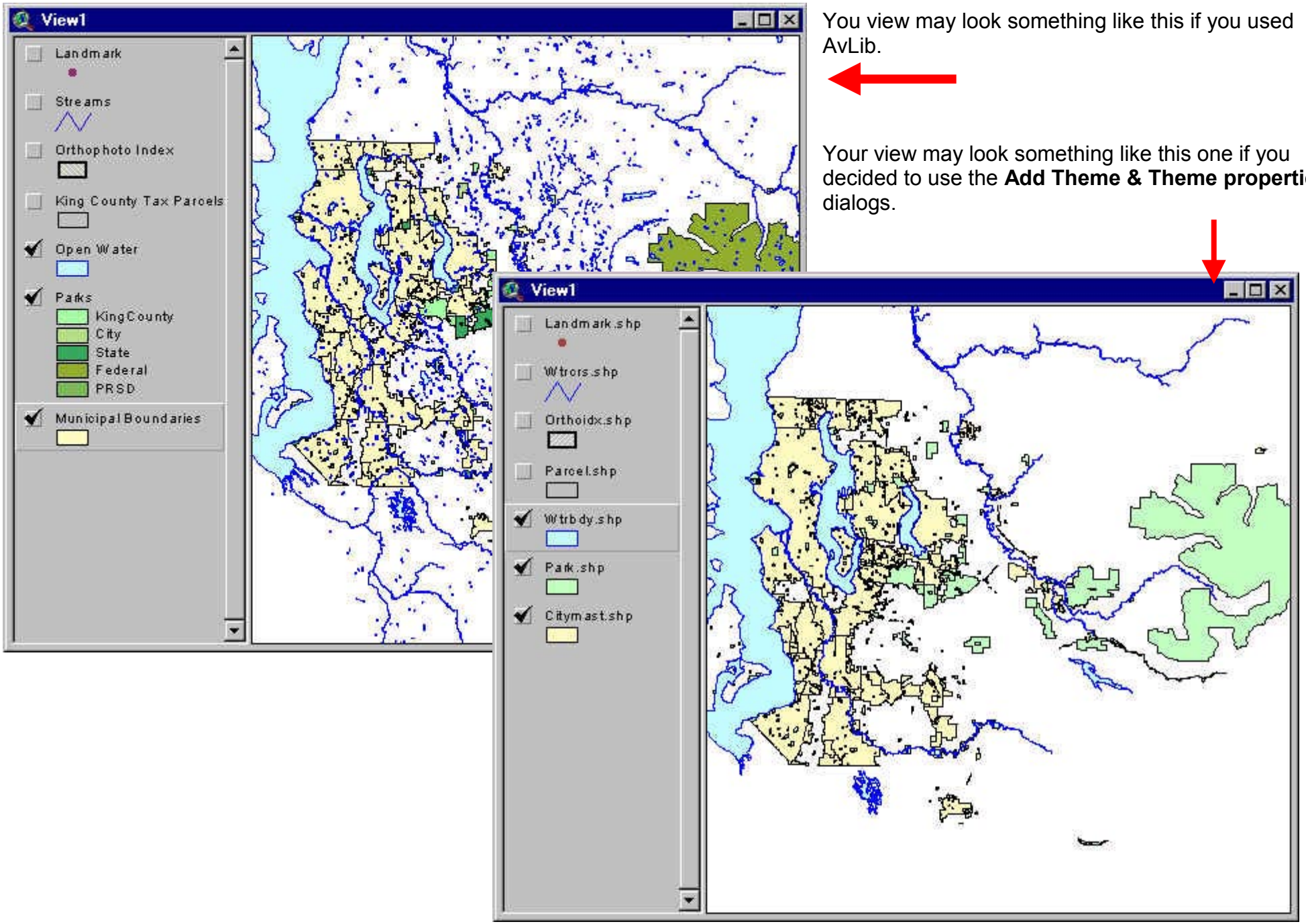
Library Category	***Alias***	***Feature Type***	***Theme Name***
Administrative boundaries	*Cities, Annexations DDES*	*Polygon*	*citymast*
Hydrography	*Open water*	*Polygon*	*wtrbdy*
Recreation	*Parks*	*Polygon*	*parks*
Property	*Parcels*	*Polygon*	*parcels*
Other	*Orthophoto Index*	*Polygon*	*orthoidx*
Hydrography	*Streams*	*Line*	*wtrcrs*
Transit	*Landmarks*	*Point*	*landmark*

Using the **Add Theme** button  begin adding the following themes to **another View** using the appropriate theme definitions.

Data Location	**Theme definition**	**Theme Name**
I:\admin\shapes\polygon\citymast.shp	*([Juris] <> "KC")*	*Municipal Boundaries*
I:\hydro\shapes\polygon\wtrbdy.shp	*([Wtr_type_c] < 901) and ([Area] > 5000000)*	*Waterbodies*
I:\recreatn\shapes\polygon\park.shp	*([Main] = 1)*	*Parks*
I:\property\shapes\polygon\parcels.shp		*Parcels*
I:\other\shapes\polygon\orthoidx.shp		*Orthophoto Index*
I:\hydro\shapes\arc\wtrcrs.shp		*Streams*
I:\transit\shapes\point\landmark.shp		*Landmark*

Once the themes are added to the View, they will appear in ArcView's Table of Contents. Spend some time using the legend editor to create colors and symbology most map-readers will recognize. **Hint:** *Remember how ArcView displays themes in the Table of Contents (TOC)*

Leave the themes Landmark, Streams, King County Tax Parcels and Orthophoto Index checked off at this time
Make citymast.shp (Municipal Boundaries) the active theme, then use the zoom to active themes button. 

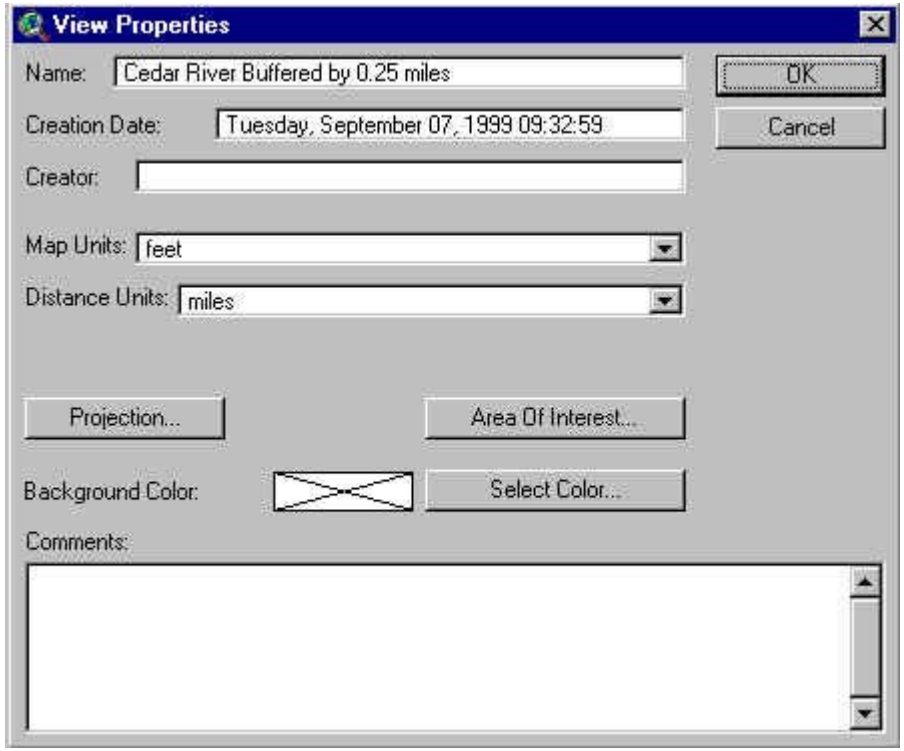


You view may look something like this if you used AvLib.

Your view may look something like this one if you decided to use the **Add Theme & Theme properties** dialogs.

Step 3 **Set the Name of the View, Map Units, and Distance Units**

The KC GIS standard coverage references the Washington State Plane coordinate system (HPGN) with length units expressed in feet.
In the View Properties Dialog box we will set the Map Units to feet and the distance units to miles to insure that our buffer operation will work smoothly.

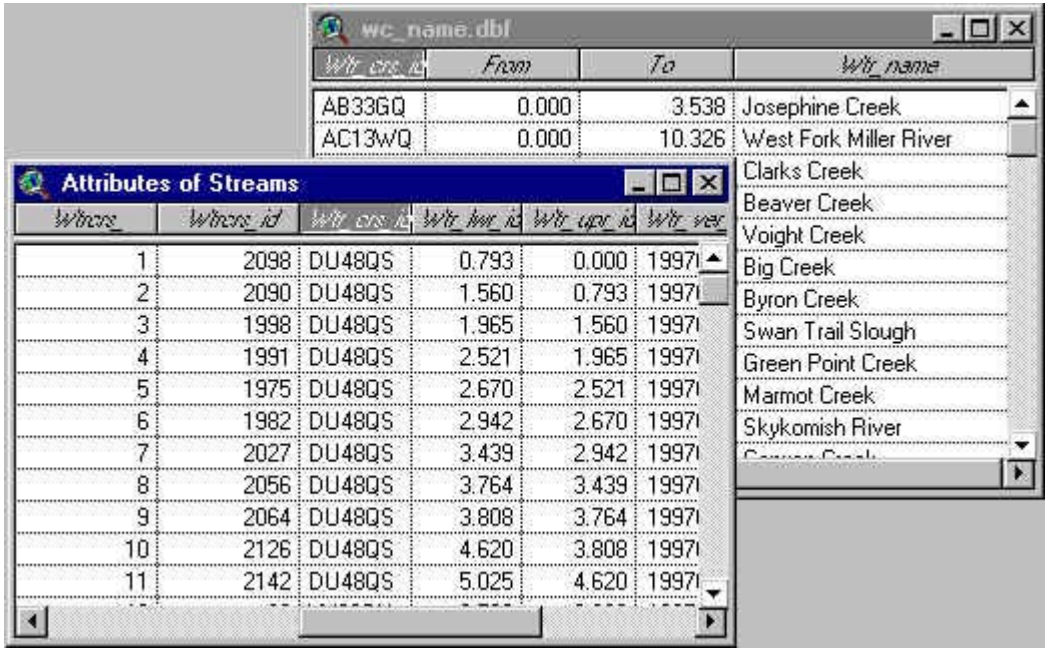


Make the **View** the active document by clicking on its banner.
From the View menu, select **Properties** to open the View Properties dialog box.
In the Name text box, highlight the name View1 and type in a descriptive name for this View.
In the Map Units drop down box, choose feet.
In the Distance Units drop down box, choose miles.

Step 4 **Join Streams to Stream Name Lookup Table**

With the View as the active document, we will make Streams (wtrcrs) the active theme and open its attribute table. We will find another table in plibrary, which contains stream names, and join it to the Streams attribute using WRIA as a common field. Using this data, we will be able to locate and label the Cedar River.

Open the **Streams** Attribute (wtrcrs) table using the **Open Theme Table** button.
With the **Project** window active, select the **Table** icon and click **Add** button.
Using the **Add Table** dialog box add **I:\hydro\shapes\table\wc_name.dbf** to the project
Make the **Wtr_crs_id** field active in the **wc_name.dbf** table.
Make the **Wtr_crs_id** field active in the **Streams** Attribute table.



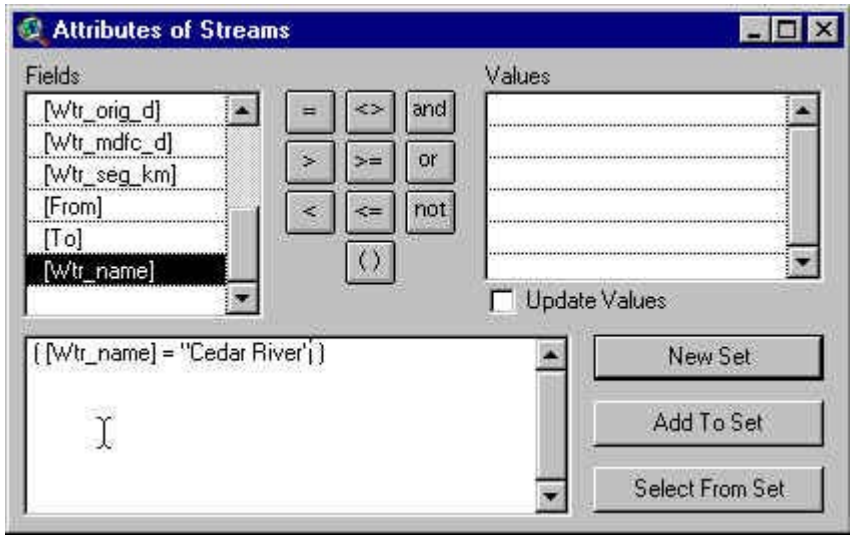
With the Streams Attribute table as the active table, click the **Join** button.

Notice that the fields from wc_name.dbf are now appended to the Streams attribute table.

Step 5 **Use the Query Builder to Locate the Cedar River**

With the Streams Attribute table the active document, click on the **Query Builder** button. 
Type the following into the query builder dialog box to locate the Cedar River.

([Wtr_name] = “Cedar River”)



Click **New Set**.

Notice that the Cedar River is highlighted in yellow in the View.

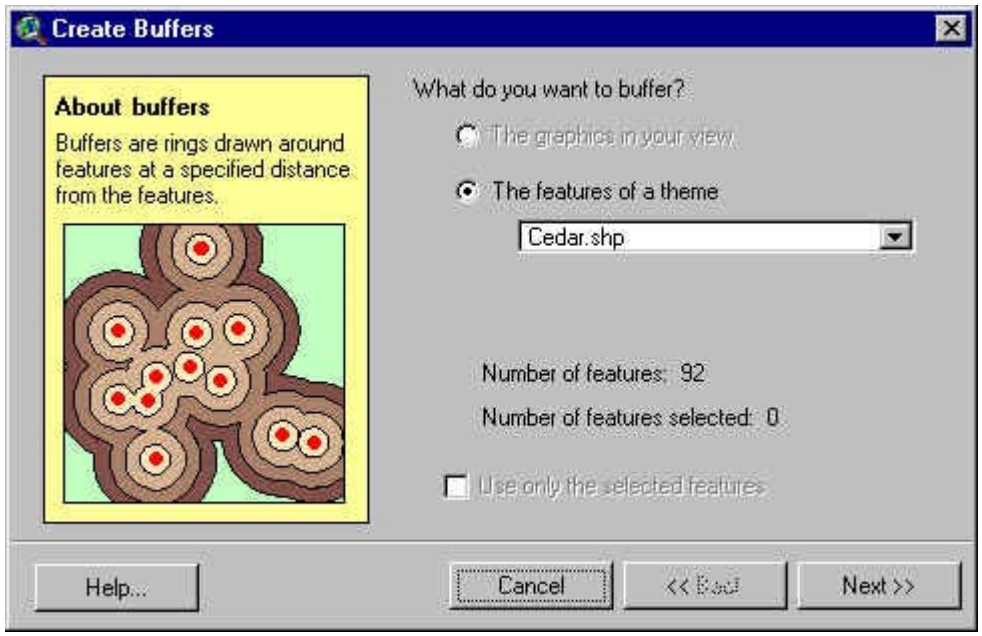
Step 6 **Convert Selected Cedar River Arcs to Cedar.shp**

With the View as the active document, make Streams the active theme.
Using the Theme pulldown menu, click on **Convert to Shapefile.**
Name the shapefile Cedar.shp and place it in your personal directory. (ie. C:\yourname)
When prompted add Cedar.shp to your current View.

You just created a new shapefile, which contains arcs for the Cedar River. Next, we will use the buffer extension to buffer the Cedar River by .25 miles.

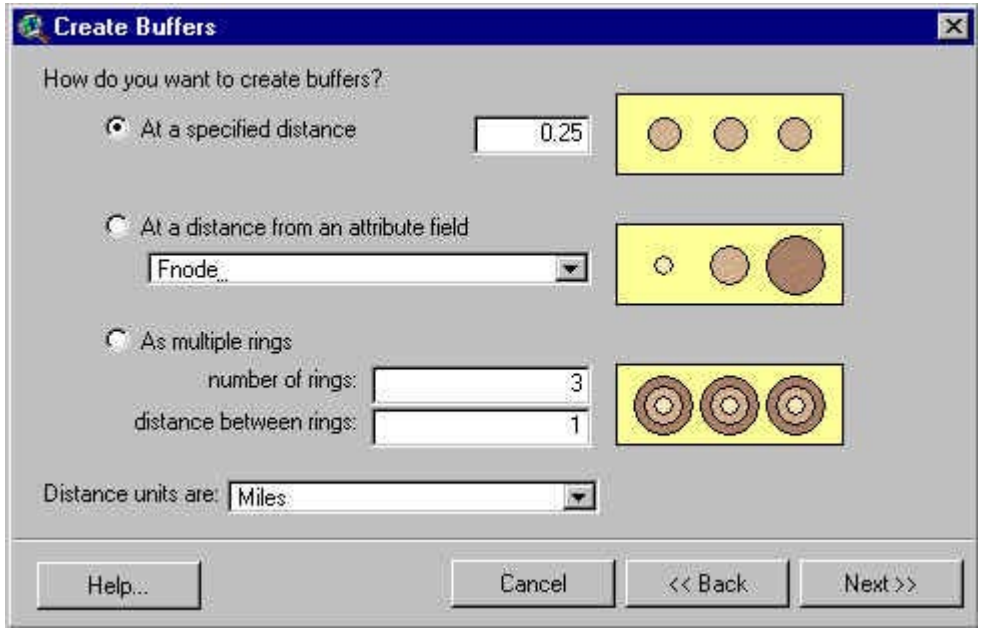
Step 7 **Buffer the Cedar River by 0.25 miles**

Make Cedar.shp the active theme in your View.
Using the **Theme** pulldown menu select **Create Buffers**.
The radio button, **The features of a theme** should be selected at this time.



Cedar.shp should appear in the dropdown list.

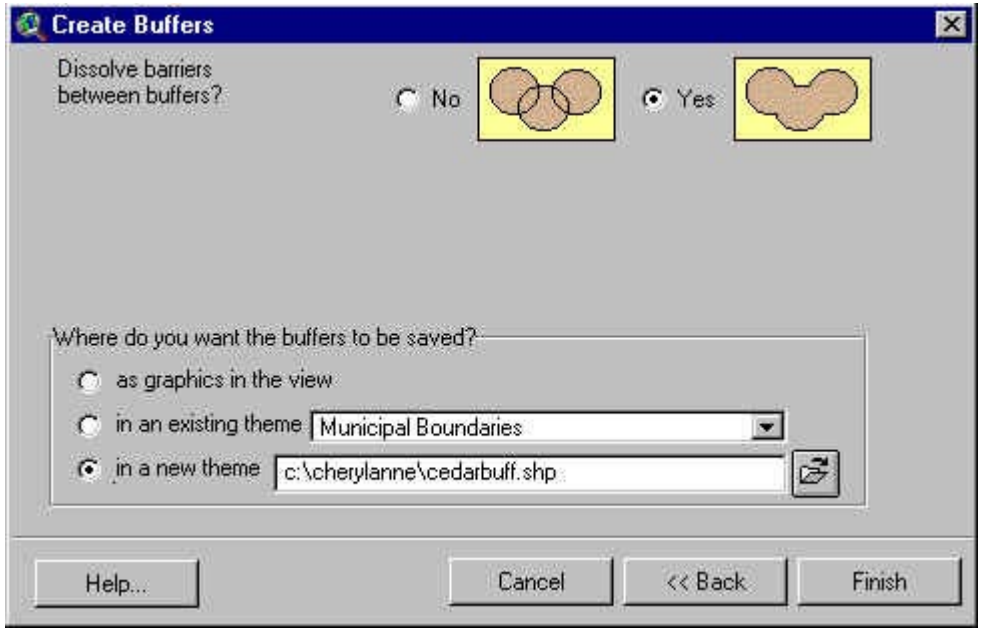
Click **Next** to move forward using the Buffer Wizard.



The radio button, **At a specified distance** should be checked on.
Type **0.25** into the text box.

The Distance units are: dropdown menu should read **miles**.

Click **Nex**t to move forward using the Buffer Wizard.
Click the radio button, in a new theme and specify the location for the new shapefile to be written.
(ie. c:\ yourname\cedar_buff.shp)
Click **Finish.**

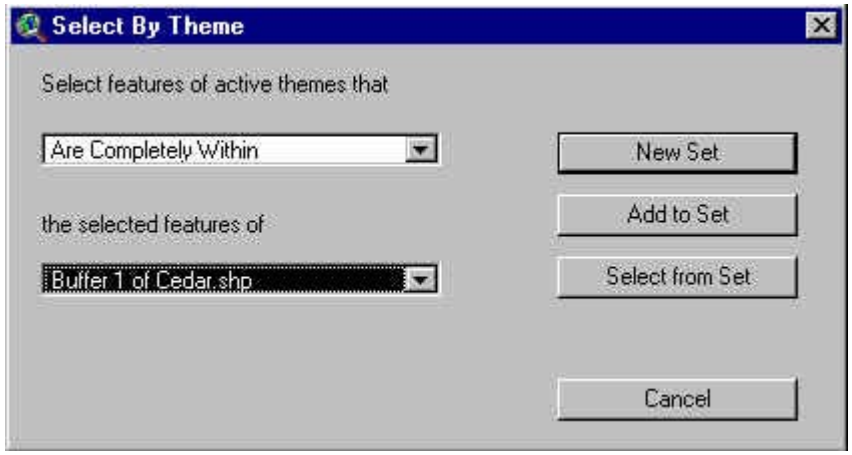


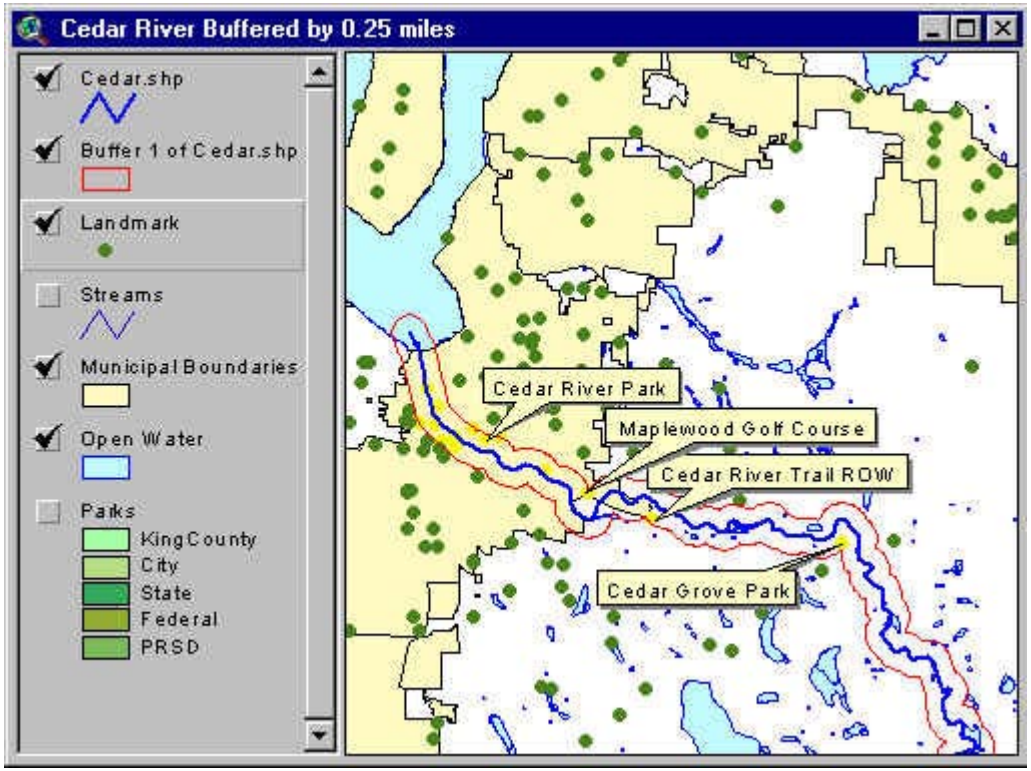
You will receive a status message from the Buffer Wizard. Add the shapefile to your current View. Next we will use this shapefile to select points which fall within the .25 mile buffer zone.

Step 8 **Select points features which fall within the buffer zone**

Make the **Landmark** theme active.
Using the **Theme** Pulldown menu, choose **Select by Theme**.

Select features of Landmark.shp that ***Are Completely Within*** the Cedar_buff.shp





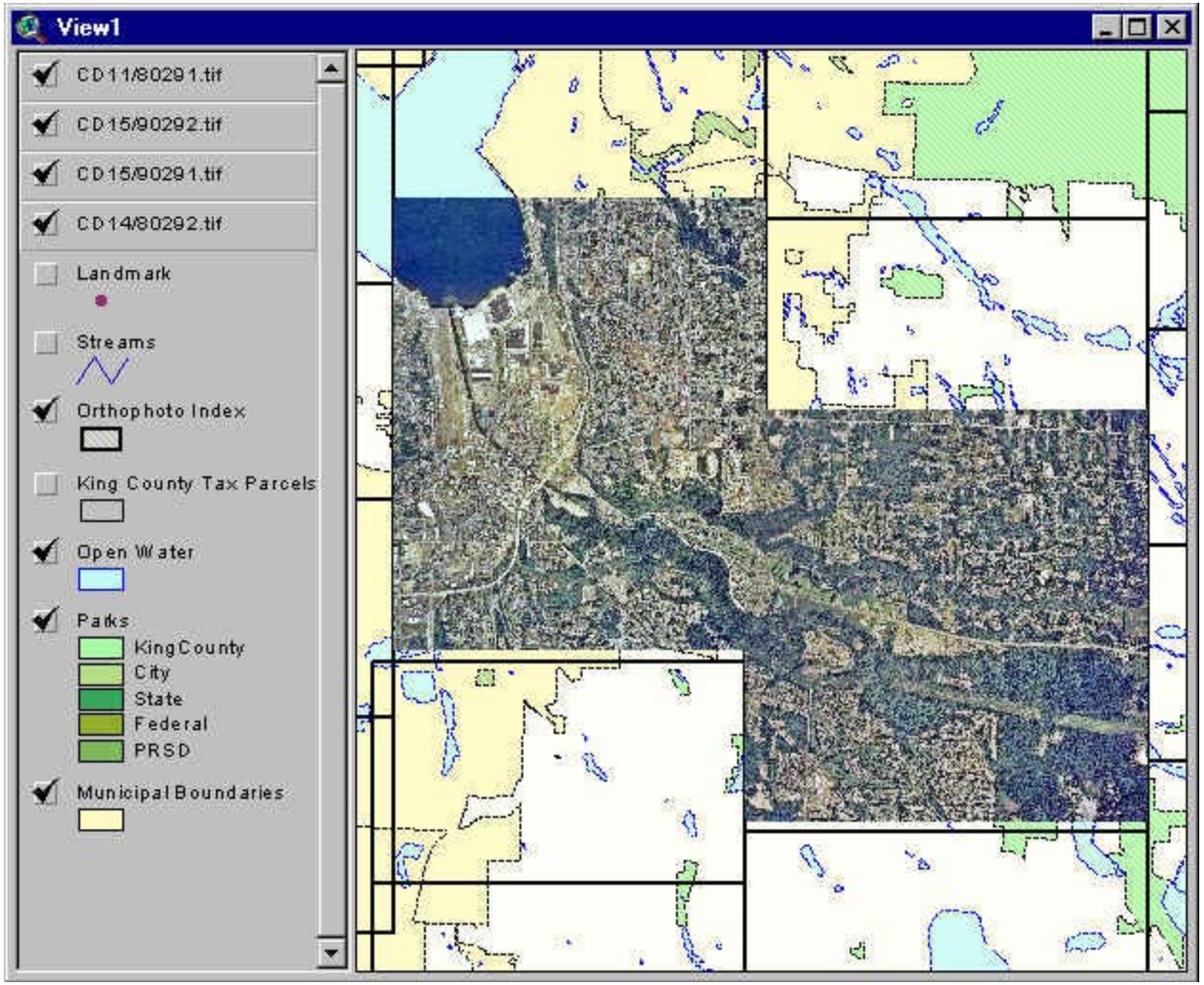
Note: To create the view displayed, we zoomed in to the study area and added call out labels.

Bonus Step ****Select wetlands which fall within the buffer zone****

Challenge Step: **Load the NIES image catalog and View aerial photography using the Orthophoto Index**

Hint: Click on the NIES Photopicker, zoom into the Cedar River and interactively display NIES Orthophotography for your study area.

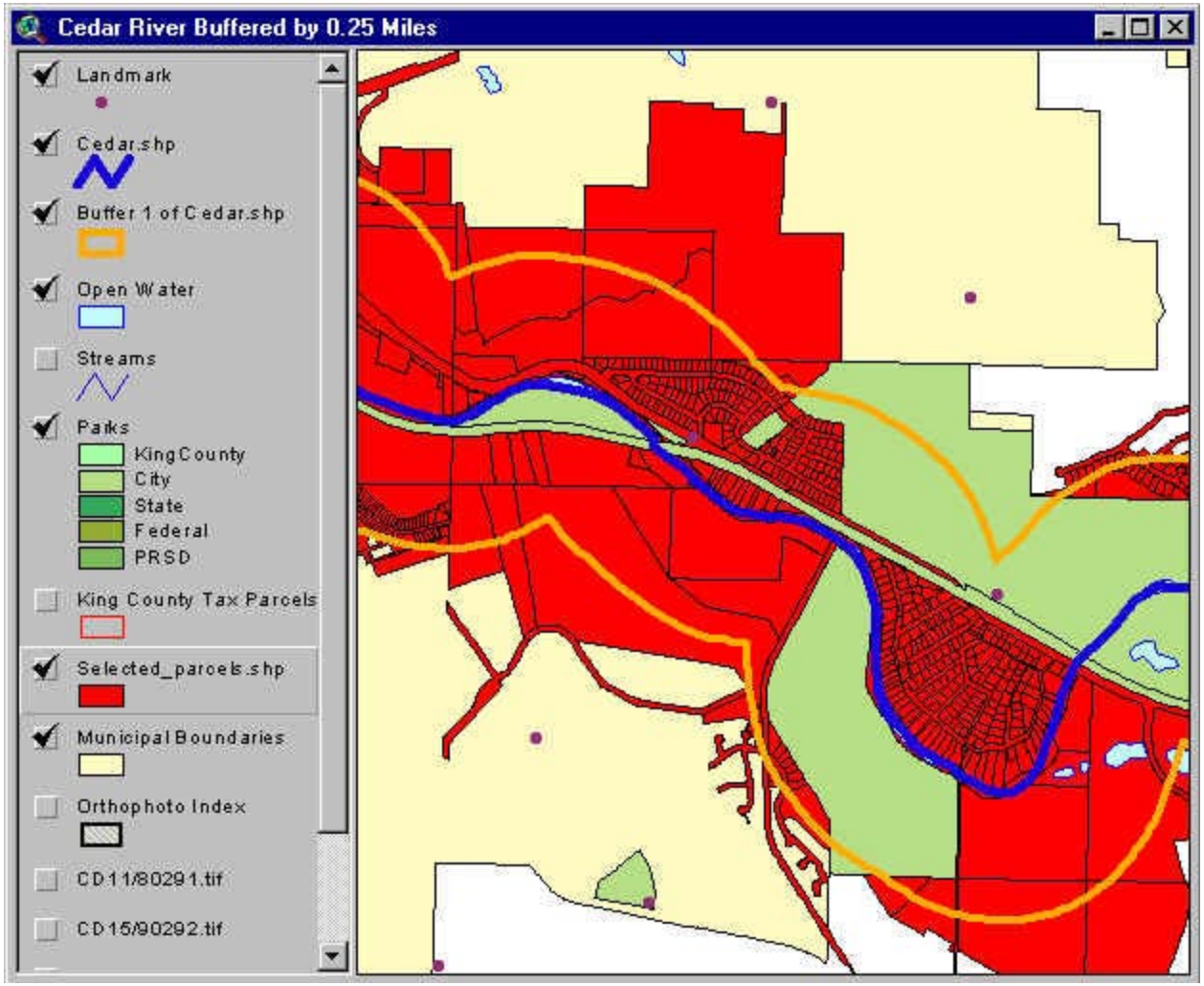
Remember to turn off the Orthophoto Index and move selected images to their correct position in the View's table of contents.



Challenge Step: **Identify, which King County Parcels fall within the buffer zone**

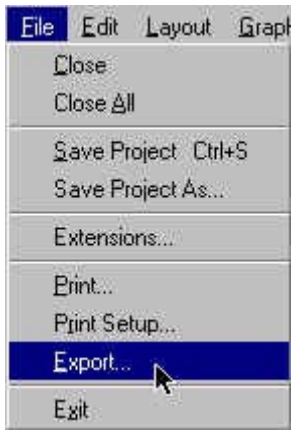
Hint: Parcels.shp takes a little while to display.

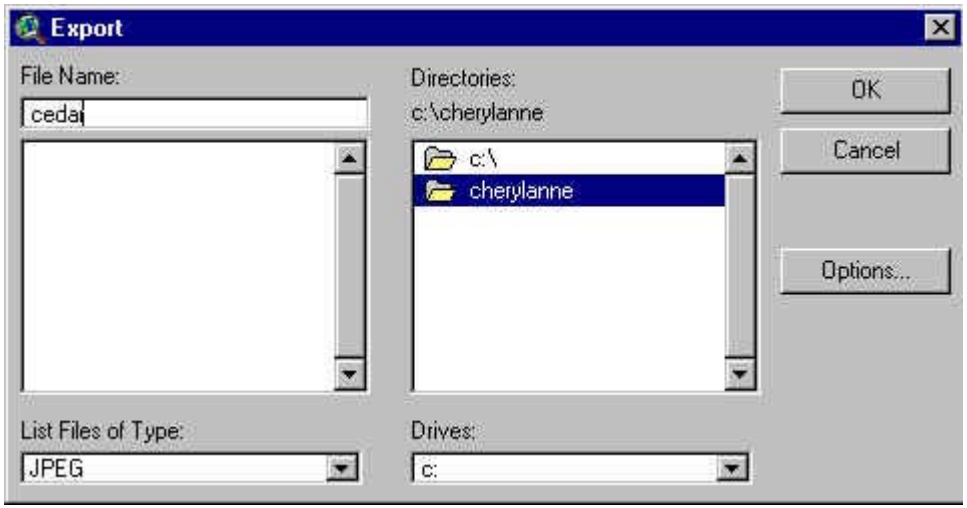
Why not make parcels.shp the active theme and select the parcels, which fall within the buffer zone, without checking the theme on. Once your selection is complete, convert the selected parcels into a new shapefile, then turn on the new parcel theme.



Step 9 **Be Creative. Use color, symbology, and ArcView's callout text tool to create a Layout or View.**

Step 10 **Export your Layout or View for use in PowerPoint.**





With your **View** or **Layout** as the active document, from the **File** menu choose **Export**.
Using the **Export** dialog box, select JPEG from the List Files of Type drop drown list.
Name your JPEG and place it in your personal directory.
Open PowerPoint and insert your JPEG into the slide of your choice.

You did it! You successfully created map output from ArcView which could be used in Power Point or the web well in advance of you manager's 3:00pm meeting with the Council. You have also mastered many skills using King County GIS data, which you can apply to many other ArcView projects. Congratulations!

Click to add title

- Click to add text

Course Evaluation

Please take a minute to complete this evaluation. Your comments will help us to design course to meet your needs. Feel free to make additional comments on the last page. Thank you for your time and suggestions.

Instructor_____Location_____Date_____
How did you find out about the course_____

Ratings

Course	Agree+	Agree	Neutral	Disagree
I acquired many valuable skills.				
I acquired much valuable information.				
The content and scope met my expectations.				
The course was well organized.				

Course Materials	Agree+	Agree	Neutral	Disagree
The class notes were easy to understand.				
The class notes covered the subjects adequately.				

Instructor	Agree+	Agree	Neutral	Disagree
The instructor was very knowledgeable.				
The presentation was clear and effective.				
The instructor managed class discussion well.				
The course was well organized.				
Questions were answered completely and clearly.				
The instructor encouraged class participation.				
The pace of the class was well managed.				

How much of the information covered in this class was new to you?

20%	40%	60%	80%	100%

What was the most important thing you gained from the course?

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What would you add or drop from the course?

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Additional comments

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